THE AMES Astrogram
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION AMES RESEARCH CENTER, MOFFETT FIELD
April 17, 2000 on-line at: http://ccf.arc.nasa.gov/dx/

600 Astrobiologists attend science results conference

"We threw a big science party and everybody came," exulted Dr. Lynn Rothschild of Ames' Earth Science division, chairperson of the Ames organizing committee for NASA's First Astrobiology Science results conference. We drew in two to three times more researchers than we expected. We gave people little notice and the response was nothing short of overwhelming--370 abstracts (came in) in a month. And the chemistry was great--just like a good party," she beamed.

photos by John Wilson

Researchers discuss astrobiology science results during a break at the first annual astrobiology science conference held at Ames on April 3-5.

Researchers view astrobiology posters in Building 3 during a break in the presentations. More than 370 abstracts were submitted for consideration to Ames conference chairperson Dr. Lynn Rothschild.

While the initial planning for the three-day event, hosted at Ames April 3 to 5, envisioned a 'modest' scientific meeting, it ended up attracting an overflow crowd of 600 internationally-renowned astrobiologists. Further, it showcased eclectic yet exciting science results, ranging from 'snowball' Earth and the origin of the metazoa to interstellar quinones and the ubiquity of convergence.

"If sheer numbers coupled with the quality of the body of works presented is any indication, the emerging field of astrobiology is poised for an exciting future," said Ames Center Director Dr. Henry McDonald, who delivered opening remarks during the conference's first day. "I am very proud of what Ames and the organizing committee, under Lynn Rothschild's direction, have accomplished on behalf of the agency and the entire scientific community. This is truly exciting," he said.

"This conference is a milestone in the development of Astrobiology as a scientific field and discipline," said Dr. Baruch Blumberg, Director of NASA's Astrobiology Institute and an enthusiastic conference participant. "It is a major contribution to our maturation process."

The large scope and variety of the abstracts that were presented "truly mirrored the multidisciplinary face of astrobiology," added Rothschild. "Researchers and scientists from diverse disciplines were actually listening and talking to one another," she enthused. "Clearly, people came for the science, and not for the funding. Otherwise, they simply would not have come from all over the world, as they did," she concluded.

Solar system dynamics and cosmic chemistry shared center stage with topics

continued on back page

Ames tests research turbine in world's largest wind tunnel

photo by Dominic Hart

Ames' 80 x 120 foot wind tunnel with the unsteady aero experiment of the DOE (Dept. of Energy) NREL (National Renewable Energy Laboratory) research wind turbine; with Ron York and Jason Brown, on low lift in foreground, and Janet Beegle and Steve Nance on high lift.

--see story page 5

ODIN due diligence contractors visit Ames

The Outsourcing Desktop Initiative for NASA (ODIN) due diligence effort at Ames started on March 8 and was successfully completed on April 4. Five contractors, CSC, Intellisource, OAO, SAIC, and WANG arrived at Ames with the same goals in mind, namely to become acquainted with the Ames ODIN customers and collect as much information about the Ames environment and requirements as possible. This is in order to develop a responsive proposal that will result in an award of the ODIN contract. The due diligence phase of the ODIN project was conducted very cooperatively and with minimal interruption to the workforce. Ames accommodated the five bidders for 26 days, during which time the ODIN project team and the directorate coordinators arranged for tours and meetings, and ensured the information requested by the bidders was available and clear. The ODIN contractor staff wore a special ODIN visitor's badge, and in many cases, special company attire. There were a total of 25 ODIN contractor employees on-site during due diligence. In the outbriefing with the ODIN project team, the ODIN contractors were very complimentary of the friendly and professional information exchanges they had with Ames staff members.

photo by Ray O'Brien

ODIN contractors pay close attention as specific requirements are explained.

The ODIN contract will provide desktop computing capability at the Center. At Ames, 1,830 desktop "seats" (PC and Macs) will be serviced by the ODIN contractor. A desktop seat includes hardware, software, installation, maintenance, customer support, training, technology refresh, and access to network printers. In addition, the ODIN contractors will bid on telephone, FAX, administrative radio, and video services as options. The selected ODIN contractor will also provide a catalog of information technology components and services that can be purchased in addition to ODIN seats. The ODIN contractor proposals for the desktop, options and catalog services will be evaluated from April 20 through July 10. The evaluations may result in either a center-by-center selection or an enterprise selection, to be determined by the Office of Aerospace Technology, Code R, selection board. The final selection date is July 11.

After selection and through November 30, the winning contractor will conduct outreach and phase-in activities. Full implementation is scheduled to begin Dec 1.

If you would like more information about ODIN's services, then refer to the Ames' ODIN Web site at: http://odin.arc.nasa.gov/ for the latest information. You can also email questions to odin@mail.arc.nasa.gov.

BY CYNTHIA CARBON

Program benefits both engineers and scientists

The NASA-ASEE Summer Faculty Fellowship Program is a ten-week summer program that brings selected college and university professors to Ames from their home university. The summer 2000 program will be administered by San José State University, under the co-direction of Professor Bradley M. Stone and Meredith Moore of Ames.

This program is an outstanding opportunity for visiting professors to collaborate with Ames scientists and engineers on a research project. The ASEE program benefits Ames engineers and scientists, as well as the visiting professors. This program has been a tremendous success over the past 36 years with over 4,500 faculty members from more than 300 institutions participating in the program since it's inception in 1964.

For more information on the program, contact Rochelle Roberts at ext. 4-6937 or access the Web site at: http:/www.asee.org/fellowships/html/nasa.htm

photo by Rochelle Roberts

1999 Fellows (from left to right): Ece Yaprak, Gilda Pour, and Amanie Abdelmessih.

Center Briefs

Leading cancer institute tests novel monitoring technique

A cancer detection technique that uses an advanced sensor developed at NASA's Jet Propulsion Laboratory, Pasadena, CA, is being tested by the prestigious Dana-Farber Cancer Institute, Boston, MA, for use in monitoring the effectiveness of cancer treatment.

The sensor is part of a device called the BioScan System (tm), developed by OmniCorder Technologies, Inc., Stony Brook, NY. OmniCorder has been developing and testing the system for three years and received Food and Drug Administration clearance to market it in December 1999.

Survey shows NASA employees among most satisfied federal workers

According to a newly published government survey, NASA employees enjoy a greater level of job satisfaction than most other federal workers. The National Partnership for Reinventing Government (NPR) employee survey showed NASA employees gave the agency the highest favorable ratings in 14 out of 32 categories. "I am incredibly proud of these results," said NASA Administrator Daniel S. Goldin. "They represent a strong statement of the top-to-bottom excellence of the NASA team."

View inside Mars reveals rapid cooling and buried channels

Some of Mars' best kept secrets, long buried beneath the surface of the red planet, were recently revealed by instruments on NASA's Mars Global Surveyor spacecraft.

New observations of Mars reveal that the planet's flat northern lowlands were an early zone of high-heat flow that later may have been the site of rapid water accumulation, according to a view of the Martian interior generated using data from Mars Global Surveyor. Elevation and gravity measurements, which have been used to probe beneath the surface of Mars, indicate a period of rapid cooling early in Martian history, and evidence for large, buried channels that could have formed from the flow of enormous volumes of water.

Improved Atlantis scheduled for April 24 launch to International Space Station

Following a review of flight readiness, Space Shuttle managers recently confirmed April 24 as the launch date for Atlantis on a mission that will continue the development of the orbiting International Space Station. Atlantis' mission will be the first flight of a new Shuttle "glass cockpit" and more than a dozen other Shuttle improvements.

Researchers discover extraterrestrial gases in buckyballs

Extraterrestrial gases, including helium, are trapped in "buckyball" molecules in a layer of sedimentary clay found in many places on Earth, according to a recently published paper, in the Proceedings of the National Academy of Sciences.

The discovery provides a new tool for tracing asteroid and comet impacts in Earth's geological and biological records. A University of Hawaii geochemist and her colleagues, including an Ames scientist, found gases that did not originate on Earth inside buckyballs, or fullerene carbon molecules.

The fullerene molecule is a hollow, cage-like structure typically made of 60 or more carbon atoms; it is also referred to as a "buckyball," in honor of Buckminster Fuller, designer of the geodesic dome that resembles the molecule.

"We discovered extraterrestrial noble gases trapped inside buckyballs in a one-inch thick sedimentary layer of clay that is exposed at several locations on Earth," said Ted Bunch, a scientist at Ames. "The buckyballs containing the gases arrived on Earth about 65 million years ago during an asteroid impact that scientists theorize ended the age of the dinosaurs. The clay layer that formed from fallout of the impact debris was globally distributed," explained Bunch.

Luann Becker, of the University of Hawaii, Honolulu, HI; Robert Poreda, of the University of Rochester, Rochester, NY; and Ted Bunch of Ames, discovered the extraterrestrial gases in the fullerenes. A copy of the article was recently posted on the Internet at: http://www.pnas.org

"Helium from different sources on Earth, like our atmosphere or the emissions from volcanoes, has a very different isotopic signature from the helium in a meteorite," Becker said. An isotopic signature is the ratio of the isotopes of an element; for example, terrestrial helium consists of a small amount of helium 3, (whose nucleus has two protons and one neutron), and mostly helium 4 (that has 2 protons and 2 neutrons). Cosmic helium contains more helium 3 than terrestrial helium sources.

"The helium we found within the fullerene cages of Australia's Murchison meteorite, for example, is similar to the helium that existed when our solar system first formed," Becker stated. That finding points to a cosmic source for the fullerenes, the researchers say. In contrast, molecules formed in the high pressure and temperature of an earthly impact or the heat of wildfires that followed would have encapsulated terrestrial helium, according to the researchers.

They say the finding also supports the theory that atmospheric gases and organic compounds arrived on the Earth's surface during asteroid and comet strikes early in the planet's history when impacts were very numerous. The discovery relates to previous work by Becker and Bunch, published in Nature in July 1999 that first identified naturally occurring fullerenes in a meteorite. The scientists found significant quantities of very large fullerene molecules, some containing as many as 400 carbon atoms, in samples from the 4.6-billion-year-old Allende meteorite that landed in Mexico three decades ago.

The subsequent work examined several Cretaceous/Tertiary boundary clay sediments distributed worldwide, including deposits in Denmark, New Zealand and North America. In each case, the researchers found fullerenes that encapsulated noble gases with unmistakable extraterrestrial and possibly extra-solar isotopic signatures.

The scientists examined the one-inch clay layer because it is a well-studied sediment that contains extraterrestrial iridium and highly shocked minerals resulting from an asteroid impact 65 million years ago. A highly shocked mineral is one that has experienced temperatures of more than 2,000 degrees C and pressures of about 400,000 atmospheres from impact shock. The clay layer documents a period of abrupt change in biological evolution, including mass extinction of the dinosaurs, now generally attributed to the impact of a carbonaceous asteroid with the Earth.

Becker said that she hopes to expand the research to examine other periods of mass extinction, such as the even more devastating event that formed the 250-million-year-old Permian/Triassic layer of sediment. She added that she hopes to determine if impacts with Earth trigger global change, including whether fullerenes of extraterrestrial origin delivered gases and carbon necessary to establish life on Earth.

"We now have a powerful new tracer to look at sediment layers very carefully," Becker said. "It opens new possibilities in looking at the problem of how planetary atmospheres evolved and maybe even how life evolved on Earth and on other moons and planets." She said that she also hopes to work with astronomers to study the formation of fullerenes.

"We have yet to learn why these things are there and what they tell us about carbon in the universe. We need to figure out how to establish their existence and how to search for it."

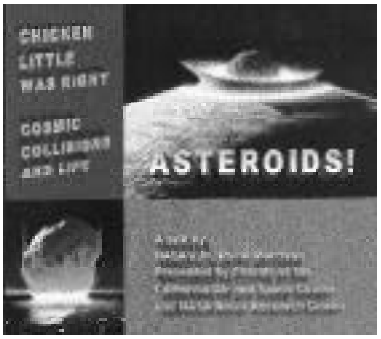
Grants from the NASA Cosmochemistry and Exobiology programs supported the research.

BY JOHN BLUCK

Ames presents talk on asteroids
--Sci-fi or scientific truth?

photo by Sonja-Jones Shin

Dr. David Morrison speaks to a crowd of avid listeners at the recent asteroid presentation.



It is always interesting to go to see the latest science fiction movies, such as "Armaggedon," "Deep Impact" or "Mission to Mars." We enjoy these films because they depict what the future may hold for us or how change could happen dramatically. However, going to see Dr. David Morrison speak at the Mountain View Center for Performing Arts on March 27 about asteroids and comets was not just interesting, it was startling.

There were no Hollywood props or cinematography. It was just plain scientific data about the very real threat of a comet or asteroid slamming into Earth. Either of these two, if large enough, when they hit the Earth, would sterilize it, killing off the bulk of plant, animal and human life as we know it, except for micro-organisms. Morrison explained that this was probably what happened to the dinosaurs during the Cretaceous period.

Morrison also mentioned that there is an asteriod named Eros that, in its orbit, could collide with Earth. Eros is a large enough asteroid that it could cause the same extinction as occurred during the Cretaceous period. Morrison's talk was better than a Hollywood production, because, in the back of my mind I knew that what he was explaining was an actual possibility.

The asteroids event was sponsored by Friends of California Air and Space Museum. Be sure to catch the next event on May 3, "Cold Hard Worlds at the Edge of the Solar System," by Jeff Cuzzi, Dale Cruikshank, and Jeff Moore, to be held at the Smithwick Theater at Foothill College. For more information on this event, call (650) 949-7888.

BY DAWN EVANS

Ames Aeromen win softball title

The Ames Aeromen softball team won the men's Thursday-night novice softball championship in dramatic fashion last week at the Twin Creeks softball complex in Sunnyvale. The Aeromen, who finished the regular season with 12 wins and 2 loses, beat Magic Rover in the first playoff round to advance to the championship game. They saved their best game for last as they took on a very tough Legato Bulldogs team.

Both teams put on a hitting display, scoring a total of 49 runs in seven innings. The Aeromen twice battled back from 9-run deficits. After falling behind 9-0 after two and half innings, they mounted a comeback to pull ahead 12-9 in the fourth.

The Bulldogs surged ahead in the top of the sixth with nine runs, and added three more in the seventh. This set the stage for the Aeromen, who entered the bottom of the seventh inning behind 24-15.

Taking it one base at a time, the team hit ten singles to put the winning run on third base with only one out. After a line-drive out to the second baseman, an infield single scored the winning run in the bottom of the last inning with two outs to secure the championship.

The 1999/2000 winter league Ames Aeromen are: Jeff Brown, Eloret, code AS; Steve Guarini, code IC; Matt Jardin, code AFC; Jon Nichols, Stanford; Bernie Nillo, Videonics Inc; Joe Olejniczak, code ASA; Tom Pace, Lockheed; Tom Pulliam, code INR; David Rodriguez, Eloret, code INR; Stuart Rogers, code INR; Alan Wray, code INR; Jason Williams, formerly MCAT, Inc, code RFC, and Greg Zilliac, code AIP.

BY STUART ROGERS

NASA logo returns to wind tunnel

photo by Astrid Terlep

A new NASA meatball was installed on the 40' x 80' wind tunnel at Ames on March 30 by a Code J contractor. This restores the tunnel to its original status as the most visually recognizable structure on the original Ames acreage and as the preferred backdrop for visiting TV crews.

Ames tests research turbine in world's largest wind tunnel

For the first time ever, engineers at Ames will begin testing a wind turbine this month in the world's largest wind tunnel to learn how to design and operate the turbines more efficiently.

The three-week test of the U.S. Department of Energy's National Renewable Energy Laboratory (NREL) "Unsteady Aerodynamics" research wind turbine is scheduled to begin April 17. Tests will be conducted in Ames' 80-by-120-foot wind tunnel. The wind tunnel is primarily used for determining low- and medium-speed aerodynamic characteristics of full-scale aircraft and rotorcraft (helicopters).

"Some of the problems encountered by wind turbines are very similar to those experienced by rotorcraft," explained Bob Kufeld, NASA project director. "NREL and NASA are working together using our wind tunnel and helicopter computer models that predict rotorcraft characteristics and their research wind turbine model to learn as much as possible about rotating blade aerodynamics," he said.

"If we can better understand the aerodynamics of rotating blades, then we can more accurately predict how the wind turbines will behave," said Dave Simms, NREL project director. "Our organization conducts research to make wind turbines operate more efficiently, more cheaply and more effectively," he added. "This research will help us learn how to build better turbines."

The research wind turbine is designed to measure structural loads and aerodynamic responses of the rotating blade or wing. The research wind turbine is mainly constructed from steel, but has lightweight carbon-fiber blades that measure 33 feet (10 meters) in diameter. The system weighs about 15,000 pounds (6,800 kilograms). Wind turbines, such as those found on the Altamont Pass in the east bay (east of the San Francisco Bay), are used to generate electricity for commercial uses.

During the wind tunnel test, the turbine will be mounted on a 40-foot tall stand and operated at a constant speed with its rotor turned left or right at various angles and different wind velocities. The wind tunnel is capable of producing wind velocities up to 115 miles per hour. NREL engineers developed the test objectives to meet recommendations of an international science panel of wind-turbine aerodynamics experts.

The NREL research turbine has been field-tested in various configurations since 1989 at the Department of Energy's National Wind Technology Center located near Boulder, CO. It has been operated in outdoor atmospheric turbulent wind conditions up to 70 mph, and has been exposed to winds above 145 mph with the rotor locked in position. Test data have shown that turbulent winds create complex operating environments for wind turbines.

According to Simms, testing in a controlled wind-tunnel environment will eliminate these factors, and produce valuable data that will enable researchers to better understand how the turbines operate at various angles and wind speeds. "We need data to improve and validate enhanced engineering models for designing and analyzing advanced wind-energy machines," Simms said. "Hopefully, this test will provide that data."

BY MICHAEL MEWHINNEY

McDonald guests on national radio program

photo by David Morse

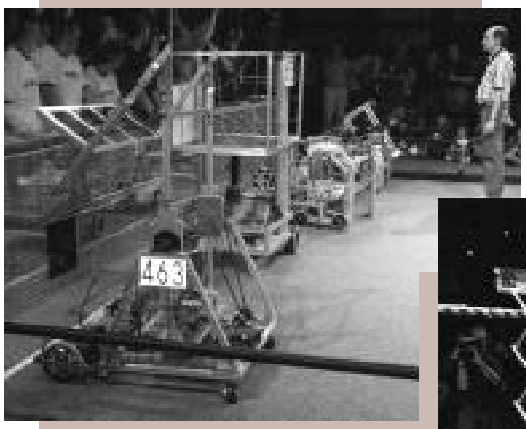
Ames Center Director Dr. Henry McDonald participates in National Public Radio's "Science Friday" program live from San José's KSJO radio station on March 31. McDonald joined host/moderator Ira Plaitow, along with guests Thomas Young, chair of the Mars Independent Assessment Team; Joseph Rothenberg, Associate Administrator for Space Flight, NASA Headquarters; Edward Stone, JPL Center Director; and journalist Joseph Schecter.

Save the date!

Strive to Sustain - Earth Day 2000
Date: April 20
Place: Moffett Training & Conference Ctr, Bldg. 3
Exhibits: 10 a.m. to 4 p.m.
Symposium: 8 a.m. to 3 p.m.
Food available to purchase: 10 a.m. - 3 p.m.
For more information, see http://q.arc.nasa.gov
Contact lvrabel@mail.arc.nasa.gov to register. Cost: Free

NASA sponsors western regional robot games

Student-made robots formed "alliances" to lift large balls and put them into a container during a western regional competition March 30 to April 1 at the San José State University Event Center. The event was sponsored by Ames.



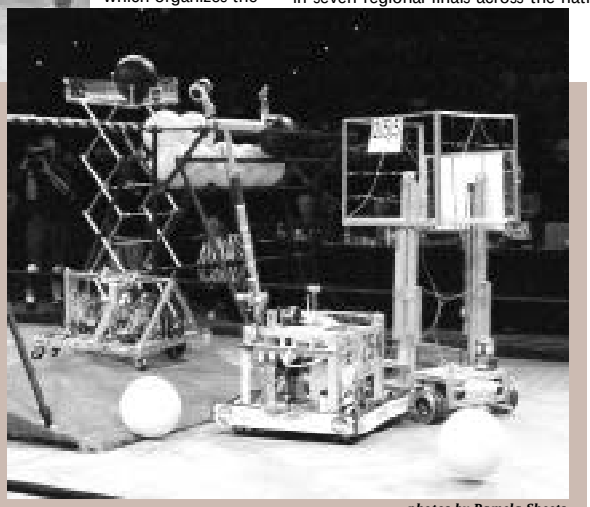
The San José robot games attracted teams from 46 high schools in California, Alaska, Arizona, Colorado, Hawaii, Montana, Oregon and Washington. During the competition, robots not only put balls into a triangular target, but also did "robot chin-ups."

"This year NASA is proud to sponsor 108 teams nationwide," said Mark León of Ames. "The endeavors in which the students are engaging for this competition are truly impressive, and we expect that in the future some of these students will be the engineers and designers of our robotic planetary exploration program," he stated.

NASA is working cooperatively with a non-profit group, "For Inspiration and Recognition of Science and Technology," (FIRST), of Manchester, NH, which organizes the contests. Organizers say the overall goal of the robot games is to allow students to interact with engineers so that the youths can see the connection between classroom instruction and the real world. Each year FIRST develops the competition and supplies "a problem" and a kit of parts to teams of students.

Youths and their advisors design and construct remote-control robots in six weeks. Advisors are often professional engineers from private industry, government and universities.

Teams from ten FIRST regions took part in seven regional finals across the nation, including the Western Regional in San José. Four of the regions are "NASA" regions: the NASA Langley/Virginia Commonwealth University (VCU) region; the Southeast region; the Lone Star region; and the NASA Ames region. The Ames region includes Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, Oregon, Utah, Washington and Wyoming.



photos by Pamela Sheets

The Ames robotics Web site can be found at: http://robotics.nasa.gov/first.html, and the FIRST Web site is at: http://www.usfirst.org lists. These include more details about the robotic contests.

FIRST was started in 1989 by inventor Dean Kamen to persuade American youth that engineering and technology are exciting fields.

BY JOHN BLUCK

Calendar & Classifieds

Event Calendar

Model HO/HOn3 Railroad Train Club at Moffett Field invites train buffs to visit & join the club in Bldg. 126, across from the south end of Hangar One. Work nights are usually on Friday nights from 7:30 p.m. to 9:30 p.m. Play time is Sunday from 2 p.m. to 4 p.m. For more info, call John Donovan at (408) 735-4954 (W) or (408) 281-2899 (H).

Jetstream Toastmasters, Mondays, 12 noon to 1 p.m., N-269/Rm. 179. Guests welcome. POC: Samson Cheung at ext. 4-2875 or Lich Tran at ext. 4-5997.

Ames Ballroom Dance Club, Ames Ballroom Dance Club. Tuesdays: Rumba 4/4, 4/11, 4/18, Salsa 4/25, 5/2, 5/9, Samba 5/16, 5/23, 5/30, 6/6. 3 levels of classes, from Beg. to Int., 5:15 - 6:45pm. Moffett Training and Conference Center, Bldg. 3/Showroom. Women dancers are especially encouraged to join. POC: Helen Hwang, hwang@dm1.arc.nasa.gov.

Ames Child Care Center Board of Directors Mtg, Every other Thursday (check Web site for meeting dates), 12 noon to 2 p.m. , N269, Rm. 201. POC: David Korsmeyer, ext. 4-3114. Web site: http://accc.arc.nasa.gov

NFFE Local 997 Union General Mtg, Apr 19, noon to 1 p.m., Bldg. 19/Rm. 2017. Guests welcome. POC: Marianne Mosher at ext. 4-4055.

Ames Multicultural Leadership Council Mtg, Apr 19, 11:30 a.m. to 1 p.m., Galileo Rm/Ames Café. POC: Sheila Johnson, ext. 4-5054.

Ames Amateur Radio Club, Apr 20, 12 noon, N-260/ Conf. Rm. POC: Mike Herrick, K6EAA at ext. 4-5477.

Ames Asian American Pacific Islander Advisory Group Mtg, Apr 20, 11:30 a.m. to 1 p.m., N-237/Rm. 101. POC: Daryl Wong, ext. 4-6889 or Margaret Salas, ext. 4-6755.

Native American Advisory Committee Mtg, Apr 25, 12 noon to 1 p.m., Ames Café. POC: Mike Liu at ext. 4-1132.

Ames Contractor Council Mtg, May 3, 11 a.m., N-200 Comm. Rm. POC: David Lawrence at ext. 4-6434.

Environmental, Health and Safety Monthly Information Forum, May 4, 8:30 a.m. to 9:30 a.m., Bldg. 19/Rm 1078. POC: Linda Vrabel at ext. 4-0924.

Hispanic Advisory Committee for Employees, May 4, 11:45 a.m. to 12:30 p.m., N-241/Rm 237. POC: Mary R. Valdez, at ext. 4-5819.

Ames African American Advisory Group Mtg, May 4, 11:30 a.m. to 12:30 p.m. POC: Robert Finnie at ext. 4-5230. Contact Robert for meeting place.

Nat'l Association of Retired Federal Employees, (NARFE), San Jose Chapter #50, Mtg, May 5, at Harry's Hofbrau, 390 Saratoga Av., S.J., Prog. and bus. mtg, follow lunch at 11 a.m. POC: Mr. Rod Perry (650) 967-9418 or NARFE 1-800-627-3394.

Ames Sailing Club Mtg, May 11, 11:30 a.m. to 1 p.m., N-262/Rm. 100. POC: Stan Phillips, ext. 4-3530.

Professional Administrative Council (PAC) Mtg., May 11, 10:30-11:30 a.m., Bldg 233A, Rm. 172. POC: Leslie Jacob, ext. 4-5059.

Ames Classifieds

Ads for the next issue should be sent to *astrogram@mail.arc.nasa.gov* by the Monday following publication of the present issue and must be resubmitted for each issue. Ads must involve personal needs or items; (no commercial/third-party ads) and will run on space-available basis only. First-time ads are given priority. Ads must include home phone numbers; Ames extensions and email addresses will be accepted for carpool and lost & found ads only. Due to the volume of material received, we are unable to verify the accuracy of the statements made in the ads.

Housing

Room for rent in house in midtown Palo Alto. Kitchen, bathroom & pool privileges. Tenant must be orderly, N/S. $600/mo. Dr. Jim Stevenson, ext. 4-5720.

For sale by owner: $529K, small horse ranch near Watsonville. Royal oaks, California/scenic area. 3 acres w/ trees & lots of open space. 3 bd/2 ba home/family rm w/ fireplace. Front/rear decks w/hot tub rm. 2 car garage w/laundry rm & storage rm. Barn, tack rm, corrals, workshop/electricity. Property fenced & outside lighting. Ron (408) 736-2150. Lv msg or call (831) 722-0130.

Walk to work! Quiet, shaded 1 bd/1 ba condo for rent between Ames and downtown. Very close to Shoreline trail access. Front/rear patios, lots of greens, carport, plenty of guest parking. Amenities: clubhouse, pool, hot tub, tennis courts, enclosed bicycle storage, laundry room. $1,300/mo plus deposit, N/S, restrictions on pets. Available May 1. Call (650) 968-4635.

3 separate sunny, furnished bedrooms for rent in Campbell/San Jose home. Great for students on temporary assignment or permanent renters. Close to bus line, or opportunity to share car rental. N/S, professional environment. Call (408) 266-7272 & lv msg.

Housing needed: College faculty visiting Ames for summer research needs temporary lodging. Apartment, townhouse, or house with 2+ bd for family of 3, June 1 to approx. August 20. Willing to pay rent while housesitting, will happily take care of plants, pets, yard. Call (650) 903-0925.

Share 2 bd/2ba apartment, master bdrm for rent, avail May 1. Located right off of H101 and Lawrence Expwy. Amenities: fire place, vaulted ceilings, balcony, W/D in unit, dishwasher, microwave, gym & spa on site, business conference ctr, gated community, etc. Rent is $1,050 a mo. plus 1/2 utils. Prefer female. Call (650) 780-4800,ext 3071during the day or (408) 773-1137 during the evening.

Seeking roomate to share Burlinghame apartment. Amenities: microwave, W/D, small balcony, storage space, very nice place with lots of light. Great Location: walking distance to Cal Train and the Burlingame Ave business district. To share with 34yr male airline pilot & national guard officer who will be away traveling most of the time. Rent: Will split the total rent which is $1,750 (some utilities inclu.) Contact via e-mail: waldmanj94@alumni-gsb.stanford.edu

Miscellaneous

Dog needs a home: A homeless dog is available for adoption. Lab and Ridgeback mix, 3 years old, spayed female, 50 pounds, short tan hair, very healthy, has all shots. Call (831) 461-9223.

HealthRider, near new, asking $300. Tunturi Softrack Treadmill, near new, asking $700. Mary (408) 778-7442.

Toilet, white, has ring & has been painted in bowl; works well. Ruth (408) 377-8421.

Transportation

'67 BMW 2000CS factory-rebuilt engine thorough restoration $17,950. Call (650) 964-2801.

'85 Toyota Corolla, needs work. $500 or B/O. Call (415) 826-3041.

'87 Acura Legend, Very clean! V6 5-spd A/C FM/AM/ tape original owner, $5,000. Call (650) 964-2801.

'89 Ford Mustang LX. Beige exterior/tan interior, automatic transmission, cruise control, AM/FM/cassette stereo, power locks, & air conditioning. Car in great condition, replaced transmission, new torque converter, and new muffler. 144K mls, runs great. $1,200. Call Marita (650) 570-5748.

'92 GMC Suburban K1500 4WD SLE. Loaded w/ options including P/S, P/B, dual A/C, power locks, towing package. Maroon w/black wheel flares. In exc. cond. w/ detailed maintenance history. Great vehicle. Owner just purchased a 2000 Suburban. 99,000 mostly highway miles. $12,250. Call (408) 218-9919.

'94 Honda motorcycle VT1100C,11K mls, black, asking $5,200 or B/O. Bob (408) 736-4039.

'94 Accura Integra LS, 4 Dr. Great condition very dependable car, low 56K mls. New lower price, must sell have twins, need more space. $9,000 or B/O. Connie (408) 246-5295.

'95 Shadow VT1100C, black, 11K mls, $5,200 or B/O. Bob (408) 736-4039.

'95 Chevy Blazer, LT,4x4. Fully loaded, roof rack, leather inter., keyless entry, off road pkg, tow pkg, cassette, 78K mls, much new. Asking $14,100 or B/O. Bob (408) 736-4039.

'98 Taurus 4-dr sedan, automatic, A/C, power windows, alarm/lock, $13,200. Great condition with Less than 16K mls! Larry or Teri, (408) 266-2535, piercepack@hotmail.com

'99 Ford Ranger XLT-Sport-blk, 2 door-extd cab, 2WD, automatic w/spd cntrl, remote entry sys, A/C, AM/ FM/cass/CD, chrome wheels, bed liner, tow pkg, ABS, 3yr/36K bmpr-bmpr warranty+, exec cond/almost new. Only 11K mls, $17K. Mike (650) 712-1690 eves.

Carpool

Carpool partners wanted to share driving & riding from San Francisco to Ames. Benny, ext. 4-5432 or email bcheung@mail.arc.nasa.gov.

Looking for carpool partners to share driving/riding from East Bay (Oakland-Hayward area) to Moffett Field. Email me at mzirkle-yoshida@mail.arc.nasa.gov.

Looking for a ride that likes to come in at 6:30 a.m. and goes home at 3:00 p.m. If interested, call Maria at 4-4394. Live in San Mateo and work here at Moffett Field. I do not drive, but willing to pay for gas, whatever the driver feels that it would be a fair deal.

Ames radio information for employees

1700KHz AM radio--information radio announcements for Ames employees during emergencies.

Vacation rental

Lake Tahoe-Squaw Valley twnhouse, 3bd/2ba, view of slopes, close to lifts. Wkend $470, midwk $175 night. Includes linens, firewood. Call (650) 968-4155 or email: DBMcKellar@aol.com

Beautiful Lake Tahoe-Squaw Valley-Olympic Village Inn for 4 people. Full kitchen, TV/VCR, pool, spa, BBQ, Free bikes, walk to lifts. $450 for 4 nights/5 days, 6/18 to 6/22/00, Sun to Thurs. Juliet (650) 321 9008. Email: Liuhsinmei@aol.com for more details.

Lost & Found

Moffett Field Lost and Found may be reached at ext. 4-5416 at any time. Residents and employees at Ames may also use Internet browser at: http://ccf.arc.nasa.gov/codejp/pages/lostFound.html to view a list of found property and obtain specific instructions for reporting lost or found property and how to recover found property. Call Moffett Field security police investigations section at ext. 4-1359 or email at: mfine@mail.arc.nasa.gov.

Book fair set

The Ames Exchange is sponsoring a book fair by Reading is Fun! Save up to 70% on books! The sale will be held at the Ames Café on April 26 and 27 from 11:00 a.m. to 2 p.m.

Ames history book unveiling

The Ames history book will be on display and distributed at a book dedication ceremony scheduled for May 31 in the main auditorium of bldg. N-201, at 2 p.m. Ames staff will also be able to view the Hall of Fame and history video produced for the 60th anniversary at the ceremony. Refreshments will be served after the event. Each attendee will receive a copy of the book.

600 Astrobiologists attend science results conference

continued from front page

such as the rise of oxygen on Earth and genome evolution. Conducted at two venues; oral and invited talks were presented in the Ames main auditorium, while poster sessions were held in the Moffett Training and Conference Center. Topical talks included the hypothesis that liquid water appeared on Earth some 4.3 billion years ago, and that 'snowball' Earth was covered, more than once, with thick layers of ice. There was even a discussion of exotic-species invasion, and the implications for habitable planets of gas giants.

The conference's main focus, according to organizers, was to showcase the latest astrobiology science results, and to bring together a diverse cadre of researchers--with various specialties ranging from astrogeophysics to planetary science. Said one enthusiastic conference-goer, "It was great! I got to hear about work in fields other than my own! That's something of a novelty."

More than two dozen media organizations covered the event from around the world. This included representatives from NHK--Japanese television, German national radio, Space.com and other internet media, the Associated Press, ABC Nightly News, national magazines Nature and Science, and the top science writers from the San Francisco Chronicle, the San Jose Mercury News, and the San Francisco Examiner.

David Morrison, Ames Director of Astrobiology and Space Research, attended the truly mammoth poster session in building 3, and was seen staring intently at a display describing direct detection of extrasolar planets using adaptive optics.

"The presence of such a large, diverse international research community scrutinized under the lens of the international media is a testament to the burgeoning interest in astrobiology," Morrison proclaimed.

Ames is the agency's Center of Excellence for Astrobiology and manages the NASA Astrobiology Institute. Agency funding for astrobiology is currently estimated at $12 million annually with projections for very significant increases in the coming years.

BY KATHLEEN BURTON AND PAMELA DAVOREN

Upcoming Astrobiology public lectures:

Foothill College in Los Altos on May 3, from 7 p.m. to 8:30 p.m., Smithwick Theater, "Cold Hard Worlds at the Edge of The Solar System" with guest speakers Dr. Dale Cruikshank, Dr. Jeff Moore and Dr. Jeff Cuzzi.

Evergreen Community College in San Jose on May 8, from 7 p.m. to 8:30 p.m., L-101 Auditorium, "Adapting to Life On Other Worlds" with guest speakers Dr. Pat Cowings, Dr. Lynn Rothschild and Dr. Melissa Kirvin-Brooks.

A note of thanks from Lloyd Corliss

To my friends at Ames: It was a joy for me to see so many of you at my recent retirement party. I will treasure the momentos, kind thoughts and humorous anecdotes that filled the evening.

Words cannot express the pleasure I have experienced while working and socializing with so many of you during my years at Ames, both with the Army and with NASA. My particular thanks to my friend Dr. X (Vic Lebacqz) for his masterful and witty job as master of ceremonies. Also, special thanks to Jolen Flores and to the organizing team lead by Dwight Balough.

My only caution to all who spoke that evening is that most of you have yet to pass through the ritual of retirement, and I plan to be there when it is your turn in the "hot seat."

The gift certificate for new golf equipment is perfect, and I do indeed plan to research and develop that new endeavor. Please stay in touch and visit Debby and me whenever your travels lead you to central Oregon and the Bend area. My email address is: Ldcorliss@aol, or call (541) 383-3554.

THE AMES Astrogram

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Ames Research Center
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Managing Editor.....David Morse
Editor.....Astrid Terlep

We can be reached via email at: astrogram@mail.arc.nasa.gov or by phone (650) 604-3347